

REMARKS

Claims 1-20 were originally pending in the application. Claims 1, 2, 9-12, and 17 are rejected. Claims 3-8, 13-16, and 18-20 are objected to. Claims 1, 4, 12, 14, 17, 19, and 20 have been amended. Claims 3, 13, and 18 have been cancelled. New claims 21-28 have been added. Claims 1, 2, 3-12, 14-17, and 19-28 are now pending in the application. Favorable reconsideration and allowance of this application is respectfully requested in light of the following remarks.

I. Claim Rejections Under 35 USC §102

Claims 1, 2, 9, 11, 12, and 17 are rejected under 35 USC 102(b) as being anticipated by Brys.

Independent claim 1 has been amended to incorporate the limitations of dependent claim 3, which has been cancelled. Claim 3 has been deemed to contain allowable subject matter in Paragraph 5 of the Office Action. Accordingly, Applicant asserts that independent claim 1 is allowable over the cited prior art. Withdrawal of the rejection of independent claim 1 and corresponding dependent claims 2, 9, and 11 is respectfully requested.

Independent claim 12 has been amended to incorporate the limitations of dependent claim 13, which has been cancelled. Claim 13 has been deemed to contain allowable subject matter in Paragraph 5 of the Office Action. Accordingly, Applicant asserts that independent claim 12 is allowable over the cited prior art. Withdrawal of the rejection of independent claim 12 is respectfully requested.

Independent claim 17 has been amended to incorporate the limitations of dependent claim 18, which has been cancelled. Claim 18 has been deemed to contain allowable subject matter in Paragraph 5 of the Office Action. Accordingly, Applicant asserts that independent claim 17 is allowable over the cited prior art. Withdrawal of the rejection of independent claim 17 is respectfully requested.

II. Claim Rejections Under 35 USC §103

Dependent claim 10 has been rejected as being unpatentable over Brys in view of Siewert. Claim 10 depends from claim 1, which is allowable over the cited prior art. The allowability of claim 1 provides proper basis for allowance of corresponding dependent claim 10. Accordingly, withdrawal of the rejection of claim 10 is respectfully requested.

III. Amendments Made for the Purposes of Form and Clarity

Claims 4, 14, 19, and 20 have been amended for the purposes of form and clarity. In particular, claim 4 has been amended to depend from claim 1. Claim 14 has been amended to clarify that the claimed latch performs the step of latching the output signal to provide a latch output indicating whether the backup voltage fell below the critical voltage. Claims 19 and 20 have been amended to depend from claim 17.

IV. Allowable Subject Matter

Applicant notes with appreciation that claims 3-8, 13-16, and 18-20 have been deemed to contain allowable subject matter in Paragraph 5 of the Office Action. Claims 3, 13, and 18 have been cancelled. Applicant asserts that the patentability of independent claims 1, 12, and 17 provides sufficient basis for the patentability of corresponding dependent claims 4-8, 14-16, and 19-20. Formal allowance of these claims is therefore respectfully requested.

V. New Claims

Applicant has inserted two additional sets of claims, namely independent claim 21 and corresponding dependent claims 22-23, and independent claim 24 and corresponding dependent claims 25-28.

Claims 21-23

New independent claim 21 is similar to original claim 1, however it recites a latch that receives the signal provided by the voltage sensor, and provides an output when the backup voltage falls below the critical voltage level. The latch output is maintained after the backup voltage rises above the critical voltage level. The microprocessor executes a program to determine, based on the latch output, whether the backup voltage was at or below the critical voltage level at any time during the loss of line voltage.

Claim 21 thus advantageously enables a user to identify that the backup voltage fell below the critical level even after the backup voltage has increased above the critical level. The present invention recognizes that volatile memory may have been previously corrupted due to low backup voltage even when the backup voltage is currently greater than the minimum threshold (See Page 11, Paragraph 47). As a result, the present invention enables the user to determine whether volatile memory may have been corrupted due to a momentary

backup power loss even after the backup voltage has returned to a “safe” level (See Page 5, paragraph 19).

Applicant has reviewed the cited prior art, and has been unable to identify the claimed latch and corresponding latch output that is maintained even after the backup voltage rises to a level above the critical level. For instance, Brys discloses that a reset signal is actuated when the backup voltage falls below a predetermined threshold (Col. 4, lines 22-28). Brys does not disclose a latch that 1) outputs a signal when the backup voltage falls below the threshold and 2) maintains the output even after the backup voltage has risen above the threshold. Rather, Brys merely discloses that an output is indicated at a central station that can be observed by the user, indicating that the backup battery needs to be recharged (See Col. 5, lines 5-20). Siewart merely discloses a system for providing backup electrical power to an electronic device. Applicant therefore asserts that independent claim 21 is allowable over the cited prior art.

New claim 22 depends from claim 21, and recites that the voltage sensor includes a supervisory circuit that measures voltage from the second line and outputs a signal comparing the measured voltage and an internal reference providing the critical voltage level. New claim 23 depends from claim 21 and recites that the latch communicates with the microprocessor to receive a signal indicating data in the volatile memory has been restored and resetting the latch.

Applicant asserts that the patentability of claim 21 provides sufficient basis for the allowance of corresponding dependent claims 22 and 23. Furthermore, Applicant notes that the prior art fails to suggest the claimed supervisory circuit and signal recited in claims 21 and 22, respectively.

Accordingly, formal allowance of claims 21-23 is respectfully requested.

Claims 24-28

Independent claim 24 has also been added that is similar to original claim 1, but recites that the microprocessor communicates with the volatile solid state memory and the voltage sensor and executes a program to determine whether the backup voltage was at or below the critical voltage level. Advantageously, the microprocessor determines if the backup voltage was below the critical voltage level at any time during the loss of line voltage after the backup voltage has returned to a level above the critical voltage level. As a result,

the user is able to determine whether the volatile memory may be corrupted even though the backup battery is currently at a level greater than the critical voltage level.

Applicant has been unable to identify any disclosure in the cited prior art that teaches or suggests determining that a backup battery has fallen below a threshold even after the battery output has risen above the threshold. As a result, the prior art does not address the problem overcome by the present invention. Specifically, the present invention envisions a situation whereby the backup battery can fall below the threshold while the operator is away. By the time the operator returns, the backup battery has again risen to a level above the threshold (See Page 3, Paragraph 7), and the user would be unable determine whether the volatile memory may have been corrupted while he/she was away. Brys suffers from this same disadvantage for failing to disclose that the indicator remains active even after the backup battery output rises to a level above the predetermined threshold. Furthermore, Brys does not recognize that a battery may only momentarily fall below the critical coltage level, and therefore teaches that the battery must be recharged when the indicator is activated (Col. 5, lines 5-33). Applicant therefore asserts that claim 24 is allowable over the cited prior art.

Claim 25 depends from claim 24 and recites a supervisory circuit that measures voltage from the second line and outputs a signal comparing the measured voltage and an internal reference providing the critical voltage level. Claim 26 depends from claim 25 and recites that the voltage sensor further includes a latch set by the signal from the supervisory circuit. Claim 27 depends from claim 26, and recites that the latch provides an output when the backup voltage falls below the critical voltage level, and that the latch output is maintained after the backup voltage rises above the critical voltage level. Claim 28 depends from claim 27, and recites that the latch further communicates with the microprocessor to receive a signal indicating data in the volatile memory has been restored and resetting the latch. Applicant asserts that the allowability of claim 24 provides sufficient basis for the allowance of dependent claims 25-28. Moreover, Applicant asserts that the prior art fails to teach or suggest the supervisory circuit, latch, latch output, and signal recited in claims 25-28, respectively.

Accordingly, formal allowance of claims 24-28 is respectfully requested.

VI. Conclusion

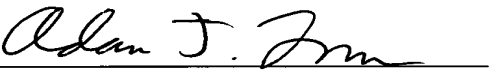
Applicant therefore respectfully asserts that all rejections and objections cited by the Examiner have been overcome. Accordingly, the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

The Commissioner is hereby authorized to deduct the \$372 fee, including a one (1) month extension of time (\$110), the addition of five (5) claims beyond twenty (\$90), and the addition of two (2) independent claims greater than three (\$172), along with any other fees arising from this or any other communication, from deposit account No. 17-0055.

The Examiner is invited to contact the undersigned at the telephone number appearing below if such would advance the prosecution of this application.

Respectfully submitted,

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